

IN THE CLAIMS:

The following is a complete listing of the claims now pending; this listing replaces all earlier versions and listings of the claims.

Claim 1 (currently amended): An apparatus for processing image data defining a plurality of input images of a changing scene recorded at different times from at least one of different viewing positions[[,]] and different viewing directions;~~and at different times~~ to generate data for defining a sequence of images conveying an evolving representation of the scene from a fixed viewing position and direction between the times at which the first and last input images were recorded, the apparatus comprising:

D¹ an image registering unit, arranged to register the input images so that the registered input images represent the scene from the same viewing position and direction~~relative~~ to the scene; and

a pixel value interpolator, arranged to interpolate between pixel values of the registered input images to generate pixel values for interpolated images from the same viewing position and direction relative to the scene for the image sequence.

Claim 2 (previously presented): An apparatus according to claim 1, wherein said image registering unit comprises:

a transformation calculator, arranged to calculate transformations to transform the input images; and

a transformation applicator, arranged to use the transformations calculated by said transformation calculator to register the input images.

Claim 3 (previously presented): An apparatus according to claim 2, wherein said transformation calculator comprises a matching unit, arranged to match features in the input images and a calculator, arranged to calculate the transformations on the basis of the matched features.

Claim 4 (previously presented): An apparatus according to claim 2, wherein said transformation calculator comprises an input-signal processor, arranged to process signals input by a user defining matching features in the input images to calculate the transformations.

Claim 5 (previously presented): An apparatus according to claim 1, wherein said pixel value interpolator is arranged to generate the pixel values for the interpolated images using linear interpolation.

Claim 6 (previously presented): An apparatus according to claim 1, wherein said pixel value interpolator is arranged to generate pixel values for interpolated images to be displayed in the image sequence in which each input image is to be displayed a plurality of consecutive times.

Claim 7 (previously presented): An apparatus according to claim 1, further comprising an overlap detector, arranged to process input images registered by said image registering unit to determine an area of overlap thereof, and wherein, said pixel value

interpolator is arranged to interpolate between the pixel values for pixels in the area of overlap only.

Claim 8 (previously presented): An image processing apparatus for generating data for a time-lapse sequence of images of a changing scene from the same viewing position and direction relative to the scene, comprising:

a transformation calculator, arranged to calculate transformations to register input images recorded from at least one of different viewing positions and different viewing directions so that the registered input images represent the scene from the same viewing position and direction relative to the scene; and

an image data generator, arranged to use the input images and the calculated transformations to generate data for images of the scene from the same viewing position and direction to be displayed in the sequence.

Claim 9 (currently amended): A method of processing image data defining a plurality of input images of a changing scene recorded at different times from at least one of different viewing positions[[,]] and different viewing directions, ~~and at different times~~ to generate data for defining a sequence of images conveying an evolving representation of the scene from a fixed viewing position and direction between times at which the first and last input images were recorded, said method comprising the steps of:

registering the input images so that the registered input images represent the scene from the same viewing position and direction relative to the scene; and

interpolating between pixel values of the registered input images to generate pixel values for interpolated images from the same viewing position and direction relative to the scene for the image sequence.

Claim 10 (previously presented): A method according to claim 9, wherein said registering step comprises:

calculating transformations to transform the input images; and
using the transformations calculated in the transformation
calculating step to register the input images.

Claim 11 (previously presented): A method according to claim 10, wherein, in said transformation calculating step, features in the input images are matched and the transformations are calculated on the basis of the matched features.

Claim 12 (previously presented): A method according to claim 10, wherein, in said transformation calculating step, signals input by a user defining matching features in the input images are processed to calculate the transformations.

Claim 13 (previously presented): A method according to claim 9, wherein, in said interpolating step, the pixel values for the interpolated images are generated using linear interpolation.

Claim 14 (previously presented): A method according to claim 9, wherein, in said interpolating step, pixel values are generated for interpolated images to be displayed in an image sequence in which each input image is to be displayed a plurality of consecutive times.

Claim 15 (currently amended): A method according to claim 9, further comprising ~~[[the]]~~ a step of processing registered input images to determine an area of overlap thereof, and wherein, in said interpolating step, the pixel values for the interpolated images are generated for the area of overlap only.

Claim 16 (currently amended): A method according to claim 9, further comprising ~~[[the]]~~ a step of generating a signal conveying data from which the sequence of images can be generated.

Claim 17 (original): A method according to claim 16, wherein the signal comprises image data.

Claim 18 (currently amended): A method according to claim 16, further comprising ~~[[the]]~~ a step of recording the signal either directly or indirectly.

Claim 19 (currently amended): A method according to claim 9, further comprising ~~[[the]]~~ a step of displaying the sequence of images.

Claim 20 (previously presented): An image processing method for generating data for a time-lapse sequence of images of a scene from the same viewing position and direction relative to the scene, said method comprising the steps of:

calculating transformations to register input images recorded from at least one of different viewing positions and different viewing directions so that the registered input images represent the scene from the same viewing position and direction relative to the scene; and

generating, using the input images and the calculated transformations, data for images of the scene from the same viewing position and direction to be displayed in the sequence.

Claim 21 (previously presented): A storage device storing computer-useable instructions for causing a programmable processing apparatus to become operable to perform a method according to any one of claims 9 to 20.

Claim 22 (previously presented): A signal conveying computer-useable instructions for causing a programmable processing apparatus to become operable to perform a method according to any one of claims 9 to 20.

Claim 23 (currently amended): An apparatus for processing image data defining a plurality of input images of a changing scene recorded at different times from at least one of different viewing positions[[,]] and different viewing directions;~~and at different times~~ to generate data for defining a sequence of images conveying an evolving

representation of the scene from a fixed viewing position and direction between the times at which the first and last input images were recorded, the apparatus comprising:

registration means for registering the input images so that the registered input images represent the scene from the same viewing position and direction relative to the scene; and

interpolation means for interpolating between pixel values of the registered input images to generate pixel values for interpolated images from the same viewing position and direction relative to the scene for the image sequence.

D1
concl
Claim 24 (previously presented): An image processing apparatus for generating data for a time-lapse sequence of images of a changing scene from the same viewing position and direction relative to the scene, comprising:

transformation calculating means for calculating transformations to register input images recorded from at least one of different viewing positions and different viewing directions so that the registered input images represent the scene from the same viewing position and direction relative to the scene; and

generating means for generating data for images of the scene from the same viewing position and direction to be displayed in the sequence using the input images and the calculated transformations.
